Name:

at1113exam: Expand, factor, and solve quadratics (v312)

1. Expand the following expression into standard form.

$$(9x + 2)^2$$

$81x^2 + 18x + 18x + 4$

$81x^2 + 36x + 4$

2. Expand the following expression into standard form.

$$(9x + 4)(9x - 4)$$

$81x^2 - 36x + 36x - 16$

$81x^2 - 16$

3. Expand the following expression into standard form.

$$(3x + 7)(9x + 5)$$

$27x^2 + 15x + 63x + 35$

$27x^2 + 78x + 35$

4. Solve the equation.

$$(3x - 2)(8x - 5) = 0$$

$x = \frac{2}{3}$ $\quad$ $x = \frac{5}{8}$

5. Factor the expression.

$$16x^2 - 49$$

$$(4x + 7)(4x - 7)$$

6. Solve the equation with factoring by grouping.

$$15x^2 + 18x + 20x + 24 \;=\; 0$$

$$(3x + 4)(5x + 6) = 0$$

$$x = \frac{-4}{3} \qquad x = \frac{-6}{5}$$

7. Factor the expression.

$$x^2 + 11x + 24$$

$$(x + 8)(x + 3)$$

8. Solve the equation.

$$11x^2 - 56x + 43 \;=\; 4x^2 + 5x + 3$$

$$7x^2 - 61x + 40 = 0$$

$$(7x - 5)(x - 8) = 0$$

$$x = \frac{5}{7} \qquad x = 8$$